UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF WISCONSIN

AUTO-OWNERS INSURANCE COMPANY and
STATE FARM FIRE & CASUALTY COMPANY,

Plaintiffs,

v. Case No. 06-C-916

UNIDEN AMERICA CORPORATION and
AMERICAN HOME ASSURANCE COMPANY,

Defendants.

DECISION AND ORDER ON DEFENDANTS' MOTION TO STRIKE PLAINTIFFS' LIABILITY EXPERT

I. PROCEDURAL BACKGROUND

On July 25, 2006, the plaintiffs, Auto-Owners Insurance Company and State Farm Fire & Casualty Company, commenced this action by filing a complaint in the Circuit Court for Door County, Wisconsin asserting claims based on strict product liability, negligence, breach of implied warranty of merchantability, and breach of implied warranty of fitness for a particular purpose. On August 24, 2006, the defendants, Uniden America Corporation and American Home Assurance Company, removed this action to the United States District Court for the Eastern District of Wisconsin on the basis of diversity of citizenship pursuant to 28 U.S.C. § 1441.

The plaintiffs are property insurers that paid for property damage suffered by condominium owners due to a fire that started in the kitchen of their condominium. The plaintiffs brought this subrogation suit against the defendants alleging that a Uniden phone was the cause of the fire. The

plaintiffs' expert, Paul Hanson ("Hanson"), has opined that the Uniden telephone was the cause of the fire.

Currently pending before the court is the defendants' motion to strike plaintiffs' liability expert. This motion is fully briefed and ready for resolution. For the reasons which follow, the defendants' motion to strike plaintiffs' liability expert will be granted in part and denied in part.

II. DISCUSSION

The defendant has filed a motion to strike the testimony of the plaintiffs' expert, Paul Hanson. Rule 702 of the Federal Rules of Evidence governs the admissibility of expert testimony:

> If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

Fed. R. Evid. 702.

The trial judge is to exercise gate-keeping responsibility with respect to the admission of expert testimony and opinions, and thereby "ensure that any and all scientific testimony or evidence admitted is not only relevant, but reliable." *Daubert v. Merrell Dow Pharms*., 509 U.S. 579, 589 (1993). The court "must determine at the outset whether the expert is proposing to testify to (1) scientific knowledge that (2) will assist the trier of fact to understand or determine a fact in issue." *Id*. at 592. This determination involves "a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue." *Id*. at 592-93.

Daubert provides a list of four factors to be used in determining the soundness of the methodology: "(1) whether the proffered conclusion lends itself to verification by the scientific method through testing; (2) whether it has been subjected to peer review; (3) whether it has been evaluated in light of the potential rate of error of the scientific technique; and (4) whether it is consistent with the generally accepted method for gathering the relevant scientific evidence." *Cummins v. Lyle Indus*., 93 F.3d 362, 368 (7th Cir. 1996) (citing *Daubert*, 509 U.S. at 594-95).

However, this list of four factors is non-exclusive and does not constitute a definitive checklist or test. *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 141 (1999). Rather, regardless of the specific factors used, the lower court must "make certain that an expert, whether basing testimony upon professional studies or personal experience, employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field." *Id*. at 152. In making this determination, "the trial judge must have considerable leeway in deciding in a particular case how to go about determining whether particular expert testimony is reliable." *Id*.

At issue is whether the proposed expert testimony of Hansen, in which he concludes that the phone was the source of the fire, is based on sound methodology and will assist the trier of fact. In his report issued on January 24, 2007, Hansen concluded that:

> The building electrical systems, including the electrical service, panels, building, wiring, wiring devices, and lights did not fail in a manner causative of the fire.
>
> The cause of the fire was an internal failure in the Uniden EXI 960 telephone system.
>
> The exact failure mechanism cannot be determined based upon the condition of the remains of the telephone system.
>
> The failure mechanism does involve ignition in either the lower third of the portable unit or in the base unit/cradle.

> The Uniden EXI 960 involved in this fire was dangerous and defective for its intended use at the time of its manufacture.

(Hansen Report at 11.)

Hansen's report is based on two joint examinations. The first was a site examination on November 10, 2004 led by Ryan Kelm ("Kelm") of EFI for the plaintiffs, and which was attended by Hansen and by the defendants' expert, Robert Miller ("Miller"). At this examination, Kelm determined that the origin of the fire was at the east end of the north kitchen counter, at or near the surface of the kitchen counter where the counter began to run south from the north wall. (Kelm Report at 6.) Miller reached a similar conclusion, stating that the origin was near the intersection of the kitchen counter and the attached perpendicular island extension. (Miller Report at 5.)

On August 16, 2005, Hansen and Miller conducted a destructive examination of the Uniden telephone at issue. Hansen concluded that the cause of the fire was the Uniden telephone. Miller concluded that the cause of the fire was undetermined.

Hansen detailed the reasoning behind this conclusion in his January 24, 2007 report. Hansen ruled out potential sources of the fire through a physical examination of a variety of potential sources located in close proximity to the origin of the fire, including the stove, microwave, and cabinets, and Italian lights in the kitchen. (Hansen Report at 3-4.) Hansen discussed various hypotheses involving these sources, but dismissed them because the damage he observed to these sources was inconsistent with the damage that would be caused if these sources were the source of the fire. (Hansen Report at 6-7.)

According to Hansen, the only remaining hypothesis which was not contradicted by the facts and evidence from the fire was the hypothesis that the fire involved either a failure of the phone base

unit or cradle, or a failure of the lower third of the portable unit which was set into the cradle and charging at the time of the fire. Hansen reported that the burn patterns in the kitchen were consistent with this hypothesis. (Hansen Report at 8.) Hansen also noted that there had been a telephone book between the base unit/cradle and the north wall. (Hansen Report at 5.)

To test this hypothesis, Hansen first tested to see whether there were combustible materials in the phone. Hansen used a candle to ignite various components of the phone, including the plastic base, plastic lens, adhesive, plastic housing of the portable unit, and foam padding for the battery compartment. These components burned freely despite their compliance with the UL flammability standard. Hansen did not test electrolytic capacitors in the base, due to a warning published by the manufacturer stating that they contain flammable solvents. (Hansen Report at 9.)

Hansen then listed four failure scenarios involving the components of the phone which could have caused the fire, including a cold solder joint resulting in a loose connection and ignition of the hot melt adhesive, and failure of an electrolytic capacitor due to excessive voltage leading to ignition and fire. Hansen did not test these failure scenarios. Rather, he stated that these failure mechanisms were well accepted in the field and presented citations from scientific journals in support of such statement. (Hansen Report at 9-10.)

The defendants do not contend that Hansen is not qualified to give an opinion regarding the source of a fire. Rather, the defendants argue that Hansen's testimony fails to meet the standards for expert testimony as set forth in *Daubert* because his opinions are based on unscientific speculation, and fail to meet Daubert factors 1, 2 and 4. Specifically, the defendants contend that Hansen speculates that the phone caused the fire because he cannot find any other source, has not conducted tests to support his opinions, has no explanation as to the mechanism by which a cordless phone

could start a fire, does not point to any literature to support his claim that cordless phones can start a fire, and based his opinion on a misconception as to where the phone was located in the condominium. (Def.'s Br. at 1-2.)

In response, the plaintiffs argue that Hansen's opinion is not merely speculation, but was formed using valid scientific methodology. Specifically, the plaintiffs contend that Hansen formed his opinion by using well-recognized scientific methodology, relying upon articles published by peers in the field, and relying upon his extensive experience reviewing fire damage to electrical components. (Pl.'s Br. at 7.)

In reviewing the basis for Hansen's proposed expert testimony, I am satisfied that Hansen formed his opinion using sufficiently sound scientific methodology in reaching his conclusion that the phone caused the fire. In his report, Hansen outlined his methodology, and provided the reasoning for his opinions. Hansen began by identifying the point of origin of the fire, which experts from both parties determined was at the intersection of the kitchen counter and an island attached to it. Based on this point of origin, Hansen then provided several hypotheses involving the potential sources of the fire located near the point of origin. Through an analysis of the evidence from the fire, Hansen eliminated each potential source of the fire, except for the Uniden phone. This elimination of other potential sources was based on Hansen's personal observations of the physical evidence from the fire.

The defendants contend that Hansen's opinion that the phone caused the fire is based on speculation because there was no actual evidence that the phone was the cause. According to the defendants, Hansen merely speculated that the phone must have caused the fire because it was the only source that he could not definitely rule out. (Def.'s Br. at 5.)

As an initial matter, process of elimination is an acceptable methodology in the scientific and engineering communities. *See, e.g.*, *Erickson v. Baxter Healthcare, Inc.*, 151 F. Supp. 2d 952, 968 (N.D. Ill. 2001) (The process of elimination is a "technique [that] has widespread acceptance in the medical community."); *Rudd v. General Motors,* 127 F. Supp. 2d 1330, 1343 (M.D. Ala. 2001) (finding the methodology of process of elimination reliable in a products liability case because "[i]nference chains built upon such circumstantial evidence are a well-established feature of admissible expert testimony.") An opinion regarding causation based on the detailed elimination of other potential causes is thus based on a reliable methodology. In the case at hand, Hansen performed a detailed analysis of the damage done to each source, and determined whether this damage was consistent with a fire originating from that source. Hansen then explicitly ruled out each potential source.

Moreover, Hansen did not base his opinion solely on his elimination of other potential causes. Rather, Hansen examined the physical evidence, and found that the burn patterns in the kitchen were consistent with a hypothesis that the fire started in the phone. As such, in contrast to the defendants' argument, Hansen did not focus on the phone simply because it was the only appliance that was not too consumed by fire to be ruled out as a cause. Hansen formed his opinion based on his analysis of physical evidence indicating that the fire started in the phone, in addition to his elimination of all other potential causes.

The defendants also argue that Hansen has no actual evidence of how the fire started in the phone, and merely sets forth four possible scenarios of what internal failures could have caused the fire. The defendants contend that Hansen did not perform any independent tests to see if these theories were indeed possible. Although the defendants acknowledge that Hansen performed a test

by using a candle to see if certain components were flammable, they argue that this test does not demonstrate the amount of heat needed to start the components on fire. As such, according to the defendants, Hansen's conclusions based on this test are still speculation. (Def.'s Br. at 4.)

To be sure, Hansen has not specified exactly how the fire started inside the phone, and stated in his report that this cannot be determined due to the condition of the remains of the phone. However, Hansen is not purporting to identify the exact failure mechanism that caused the fire. Rather, Hansen is testifying as to the source of the fire (the phone), and offering potential explanations as to how an internal failure in a phone could start a fire. This is unlike the situation in *Colony Insurance Company v. Coca-Cola Company*, 239 F.R.D. 666 (N.D. Ga. 2007), cited to by the defendants. In *Colony Insurance*, the expert stated that a bad crimp in the power supply was the electrical failure which caused the fire, and that the problem occurred during manufacturing. *Id*. at 670. The court allowed the expert to testify as to the location being in the power supply and that there was severe damage at the crimp, but precluded the expert's testimony that the crimp problem occurred during manufacturing. *Id*. at 676. The expert had pinpointed the power supply as the source of the fire by ruling out other potential sources of the fire. *Id*.

In the case at hand, Hansen is not speculating as to the exact cause of the failure, but rather offering potential failure mechanisms to demonstrate that a phone cause could start a fire. As such, Hansen's inability to pinpoint the exact failure mechanism does not impact the issue of whether his methodology was sufficiently reliable to support this particular opinion. At issue, therefore, is whether Hanson's methodology in reaching his opinion that a phone could cause a fire is sufficiently reliable.

I am satisfied that Hansen's methodology is sufficiently reliable. Hansen concluded that four failure mechanisms in the phone could trigger a fire based on his own tests and the documentation of failure mechanisms well-accepted in the field. This methodology used by Hansen appears reliable. Hansen first tested certain components of the phone to see whether they were flammable using an ordinary votive candle. After ascertaining that the phone was flammable, Hansen then determined whether components inside the phone could ignite and create a flame. Although Hansen did not personally conduct tests, he cited to various items of scientific literature which discuss the potential for ignition and fire from the four failure mechanisms involving components within the phone. As stated in Hansen's report, this literature demonstrates that the failure mechanisms are well accepted in the field and are not "novel science." (Hansen Report at 10.)

The defendants argue that Hansen has failed to cite to any literature indicating that a cordless phone could start a fire, and that Hansen does not have any experience investigating cordless phone fires. (Def.'s Br. at 6.) However, this does not make Hansen's methodology unreliable. At issue is whether the components of a phone could start a fire, and Hansen has cited to literature involving fires started by the components of the phone. Whether these components were located in a phone or a different appliance is largely irrelevant.

In addition to arguing that Hansen's methodology is unreliable, the defendants also contend that Hansen's conclusion is based on a mistake of fact. In Hansen's report, he states that there had been a telephone book between the base unit and the north wall, and that the bottom of the telephone book had been protected by the counter top. (Hansen Report at 5.) The defendants point out that in Hansen's deposition, he was told the phone was actually mounted on the wall, and that Hansen

subsequently stated that he was now more comfortable stating that the fire started in the base unit. (Hansen Dep. at 48-49.)

Although this may be true, it does not influence the reliability of Hansen's methodology. As an initial matter, it does not appear that this mistake of fact has any impact on Hansen's analysis. Whether the phone was on the phone book or the wall, the origin point of the fire does not materially change. Moreover, Hansen did not materially change his hypothesis given this new information. There is no indication that either Hansen's methodology or conclusion was based on the phone being located on top of the phone book rather than on the nearby wall.

Regardless, this issue does not impact the issue of whether Hansen's methodology is sufficiently reliable. The defendants also argue, in addition to this factual mistake regarding the location of the phone, that the internal components contain only 1.8 watts of power, which is insufficient to generate enough heat to cause a fire in the phone. Moreover, the defendants contend that Hansen failed to properly ascertain the original length of the Italian lights or where they were located prior to ruling them out as a cause. However, these arguments address factual underpinnings and conclusions, rather than Hansen's methodology. As stated by the Seventh Circuit, "[t]he soundness of the factual underpinnings of the expert's analysis and the correctness of the expert's conclusions based on that analysis are factual matters to be determined by the trier of fact." *Smith v. Ford Motor Co.*, 215 F.3d 713, 718 (7th Cir. 2000); *see also Walker*, 208 F.3d at 587 (stating that the district court should not consider the "factual underpinnings" of the testimony but rather whether "it was appropriate for [the expert] to rely on the test that he administered and upon the sources of information which he employed"). The original length of the Italian lights, the exact location of the

phone, whether the components generate only 1.8 watts, or whether 1.8 watts is sufficient to start a fire are matters to be considered by the trier of fact.

In sum, I conclude that Hansen's opinion that the phone caused the fire is based on methodology that is sufficiently reliable. Hansen identified the phone as the source of the fire based on a detailed application of the process of elimination, as well as evidence affirmatively supporting his opinion that the phone was the cause. Hansen then confirmed that the phone could be the ignition source based on his own tests and the well accepted scientific literature discussing components of the phone in question.

Given that Hansen's testimony is reliable, the next issue is whether "the testimony will assist the trier of fact with its analysis of any of the issues involved in the case." *Smith*, 215 F.3d at 719. "[E]xperts are allowed to posit alternate models to explain their conclusion." *Id*. at 589. "Where an expert's hypothetical explanation of the possible or probable causes of an event would aid the jury in its deliberations, that testimony satisfies Daubert's relevancy requirement." *Id*. "However . . . these hypothetical alternatives must themselves have 'analytically sound bases' so that they are more than mere 'speculation' by the expert." *Id*.

I am satisfied that Hansen's testimony that the phone was the cause of the fire, and that there are four potential failure mechanisms, will assist the trier of fact. The ultimate issue is, *inter alia*, whether a manufacturing or design defect in the phone caused the fire, and the question of whether the phone, in fact, caused the fire relates directly to this ultimate issue. Although Hansen cannot pinpoint the exact failure mechanism which caused the fire, as noted above, experts can present alternate theories to support their conclusion. Hansen is able to list four possible explanations for his conclusion that the phone was the source of the fire. These hypothetical alternatives, as discussed

above, are supported by Hansen's personal observations and his reliance on well-accepted scientific literature.

The defendants also argue that Hansen's testimony is speculation which could be performed by a layperson. (Def.'s Reply Br. at 6.) To be sure, "[a]n expert . . . must testify to something more than what is 'obvious to the layperson' in order to be of any particular assistance to the jury." *Ancho v. Pentek Corp*., 157 F.3d 512, 519 (7th Cir. 1998) (quoting *Schutt Mfg. Co. v. Riddell, Inc*., 673 F.2d 202, 205 (7th Cir. 1982).

Despite the fact that Hansen is unable to state with absolute certainty the failure mechanism which triggered the fire, his opinions are based on scientific analysis and on his experience in determining the cause of fires. Moreover, his opinions provide information which is not obvious to the layperson. It is not necessarily obvious to a layperson what type of damage indicates that a source can be ruled out as a potential cause. Nor is it necessarily obvious to a layperson what type of damage is consistent with a fire starting within an appliance at a particular location. Furthermore, a layperson would not necessarily be aware of the potential failure mechanisms of the various components within the phone.

However, although Hansen's testimony concerning the source of the fire and the potential failure mechanisms has a proper basis and will assist the trier of fact, Hansen has failed to provide a scientific basis for his conclusion that the phone's failure was due to a defect in the phone which was present at the time of manufacture. The methodology used by Hansen to determine the source and cause of the fire does not also provide support for his conclusion regarding whether there existed a defect at the time of manufacture. As such, Hansen has not provided a scientific basis for his

conclusion that the phone's failure was due to a manufacturing or design defect, and this conclusion is inadmissible speculation.

To begin with, Hansen has not identified any potential manufacturing or design defects which could have resulted in the phone's failure. Hansen is unable identify any particular defect because of the damage to the phone, and has thus not provided evidence of any specific defects within the phone which could have triggered the fire. Although Hansen has identified potential failure mechanisms, he has not specifically linked these mechanisms to a manufacturing or design defect in the phone. Furthermore, Hansen did not eliminate other potential causes for the phone's malfunction outside of an internal defect.

Even assuming Hansen's methodology supports an inference that a phone would not ignite unless there was an existing internal defect, this only supports a conclusion that the phone may have been defective at the time of the fire. However, Hansen has not provided any basis for his conclusion that the phone, at the time of the fire, was in the same condition as it was when purchased five years prior. Hansen has not offered any evidence regarding his knowledge of the manufacture of the phone, or offered evidence of a defective design. Moreover, Hansen has not eliminated any other sources which could have caused the phone's "defect" during the five years since the purchase of the phone. Without any basis for his opinion that the phone was defective and unchanged since its manufacture, Hansen's opinion is pure speculation.

Such being the case, Hansen will not be allowed to testify that, in his opinion, the phone was dangerous and defective at the time of its manufacture. However, for all of the foregoing reasons, Hansen will be allowed to testify as to his opinion that the phone was the cause of the fire, and as to his opinion regarding the potential failure mechanisms.

NOW THEREFORE IT IS ORDERED that the defendants' motion to strike plaintiffs' liability expert be and hereby is **GRANTED IN PART AND DENIED IN PART**.

SO ORDERED this 3rd day of August 2007, at Milwaukee, Wisconsin.

s/ William E. Callahan, Jr.
WILLIAM E. CALLAHAN, JR.
United States Magistrate Judge